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FIG . 1

Replacement Sheet
Appl. No.: 09/216,206 **Inventor:** David W. Roth et al. **For:** System and method for real-time bidding for Internet advertising space
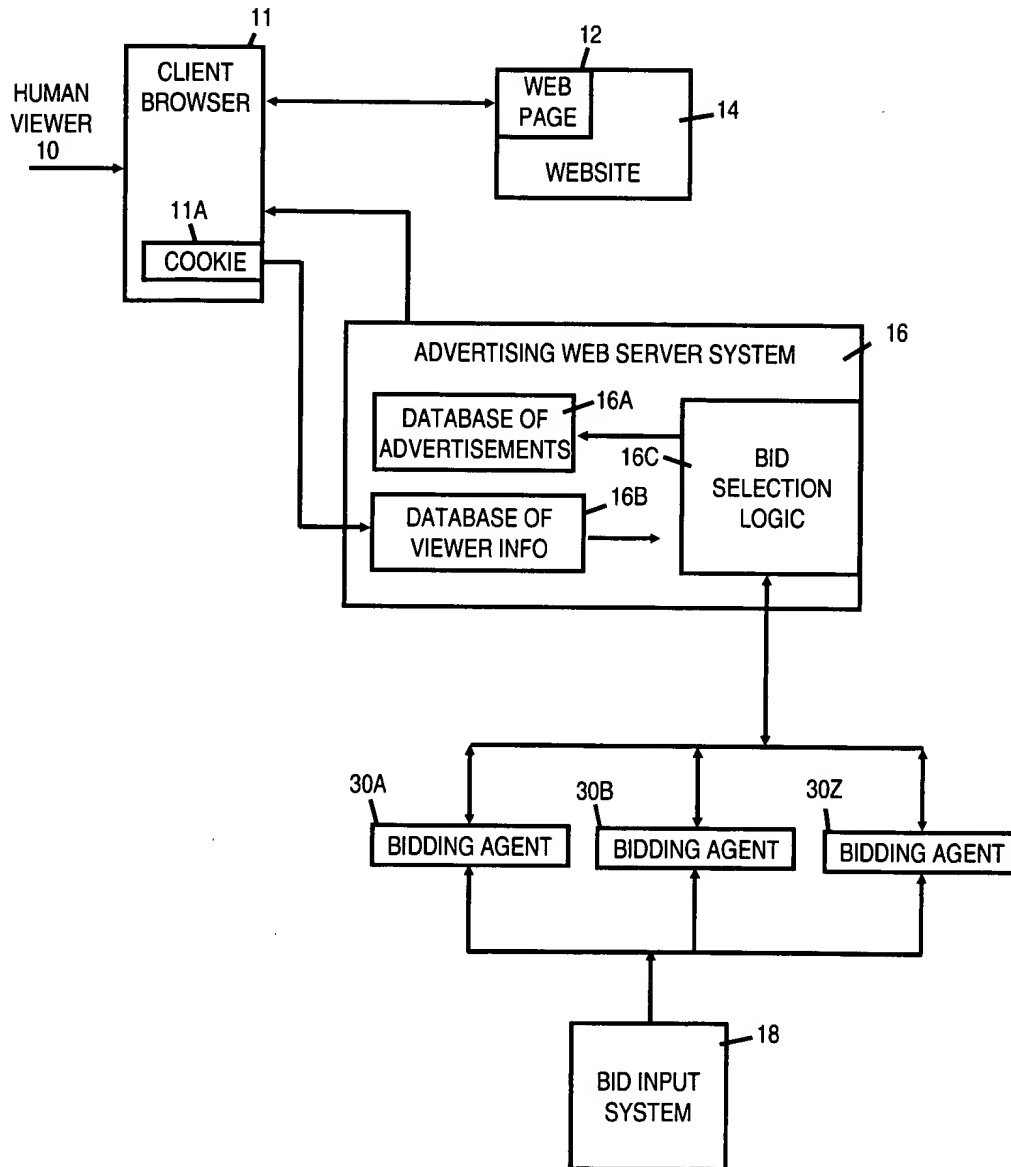
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USER SELECTS
WEB PAGE — 201

WEB PAGE LINKS
TO SERVER — 202

VIEWER INFORMATION
COLLECTED — 203

FIG . 2A

ADVERTISING SPACE BECOMES
AVAILABLE ON A WEB PAGE
(IN REA-TIME) — 210

WEB SERVER SYSTEM 16
SENDS VIEW-OP
INFORMATION TO BIDDING AGENTS
(IN REAL-TIME) — 211

ADVERTISER SETS
PROPOSED BID WITH
PARAMETERS — 212

BIDDING AGENTS SEND BIDS
TO BID SELECTION LOGIC — 213

BID SELECTION LOGIC PICKS
WINNING BID — 214

ADVERTISEMENT SENT TO
BROWSER 11 — 215

FIG . 2B

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```
┌──────────────┐                    ┌──────────────┐
│              │─11                 │              │─14
│    CLIENT    │◄───────────────────│   WEB SITE   │
│   BROWSER    │                    │              │
│              │                    └──────────────┘
└──────────────┘
        │
        ▼                                  ┌─16
┌──────────────────────┐
│  WEB SERVER     ─310  │
│                       │
│   ┌──────────────┐    │
│   │  AD TABLES   │    │
│   └──────────────┘─16A│
└──────────────────────┘
        │
        ▼
┌────────────────────────────────┐        POST VIEWOP ──►   ┌─────────────────┐
│  VIEW SERVER          ─320      │                          │                 │─30A
│            ┌──────────────┐     │◄──────── BID ────────────│ BIDDING AGENT   │
│     16C ─  │   BID        │─────┼──────────────────────────│                 │
│            │  SELECTION   │     │                          └─────────────────┘
│   16B      │   LOGIC      │     │                          ┌─────────────────┐
│  ┌───────┐ │              │     │◄─────────────────────────│                 │─30B
│  │ DATA  │ │              │─────┼──────────────────────────│ BIDDING AGENT   │
│  │TABLES │ │              │     │                          │                 │◄─
│  └───────┘ └──────────────┘     │                          └─────────────────┘
│                                 │                          ┌─────────────────┐
│                                 │◄─────────────────────────│                 │─30Z
│                                 │──────────────────────────│ BIDDING AGENT   │
└────────────────────────────────┘                          │                 │
        │          │                                         └─────────────────┘
        ▼          │
┌──────────────┐   │         ┌────────────────────────┐
│  LOG AND     │─320A        │  BID INPUT             │─18
│  BILLING UNIT│             │  SERVER                │
│              │             │  ┌──────────────┐      │
└──────────────┘             │  │ DATA TABLE   │─18-T │
                             │  └──────────────┘      │
                             └────────────────────────┘
```

FIG . 3

Replacement Sheet
Appl. No.: 09/216,206 **Inventor:** David W. Roth et al. **For:** System and method for real-time bidding for Internet advertising space
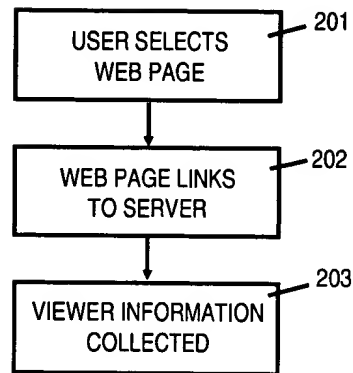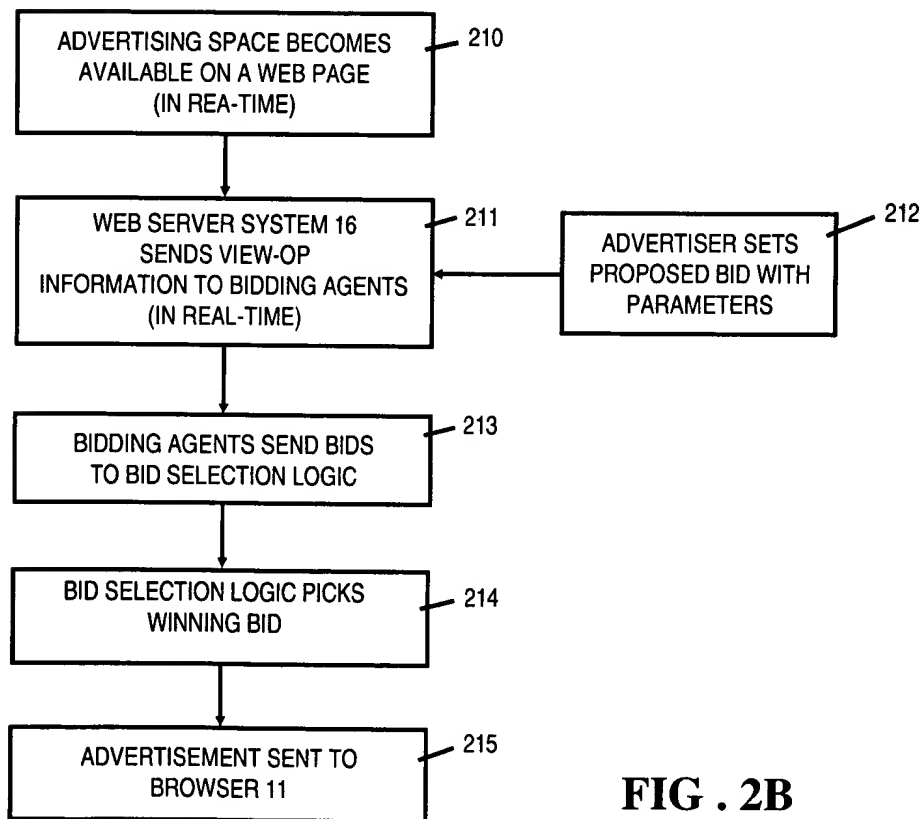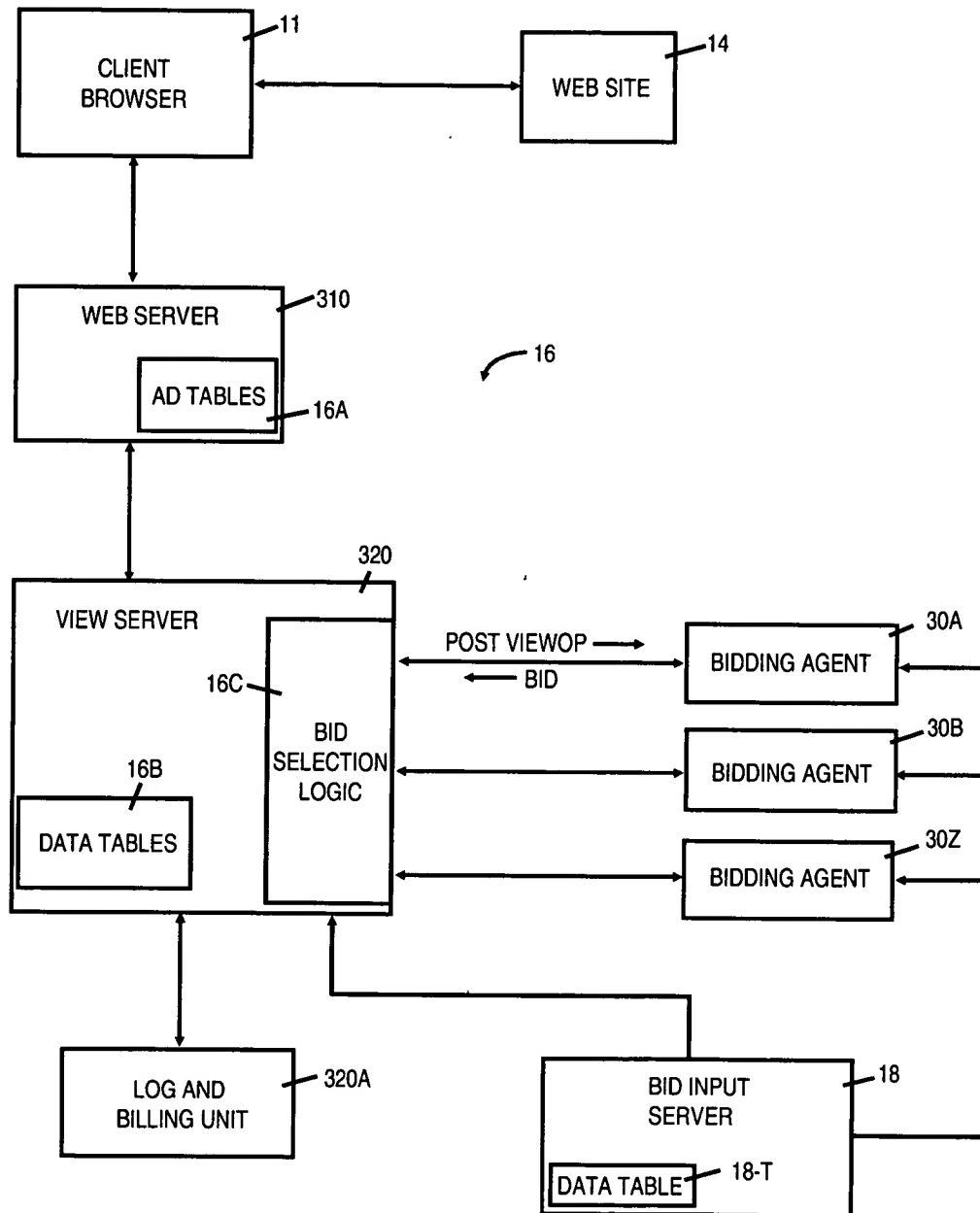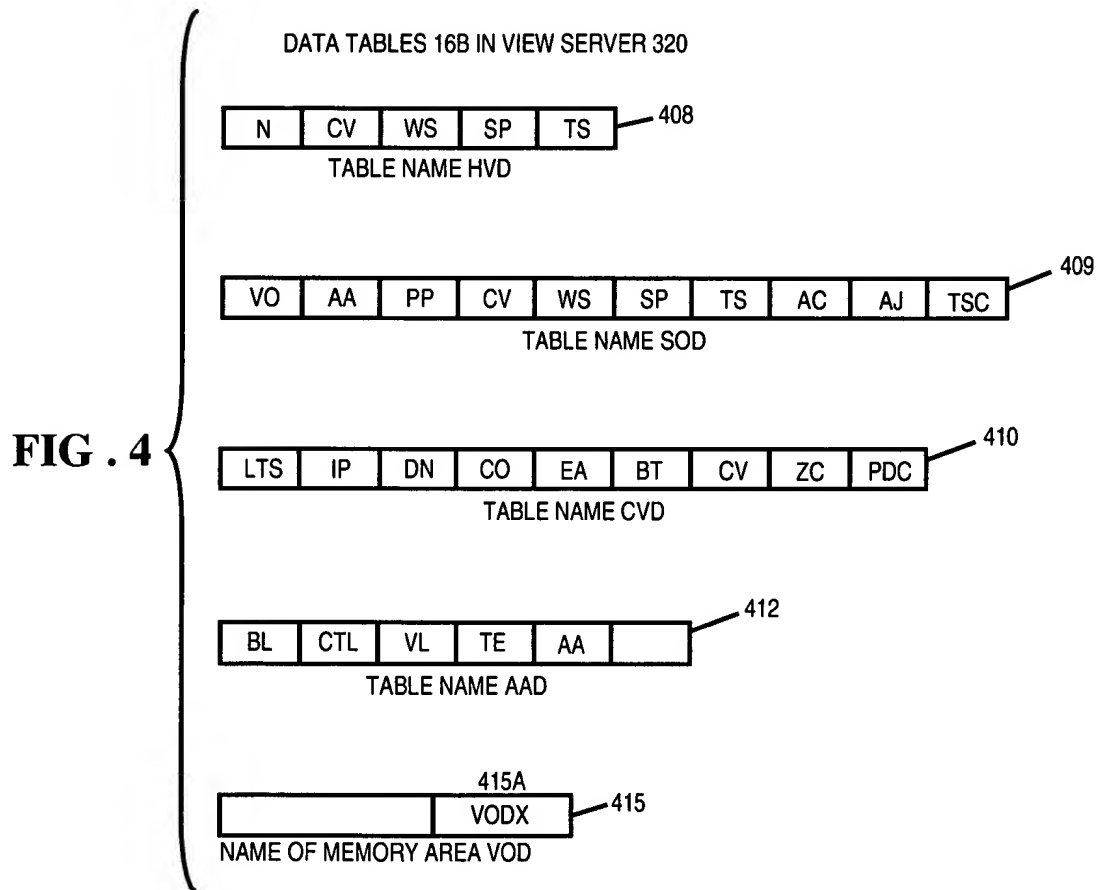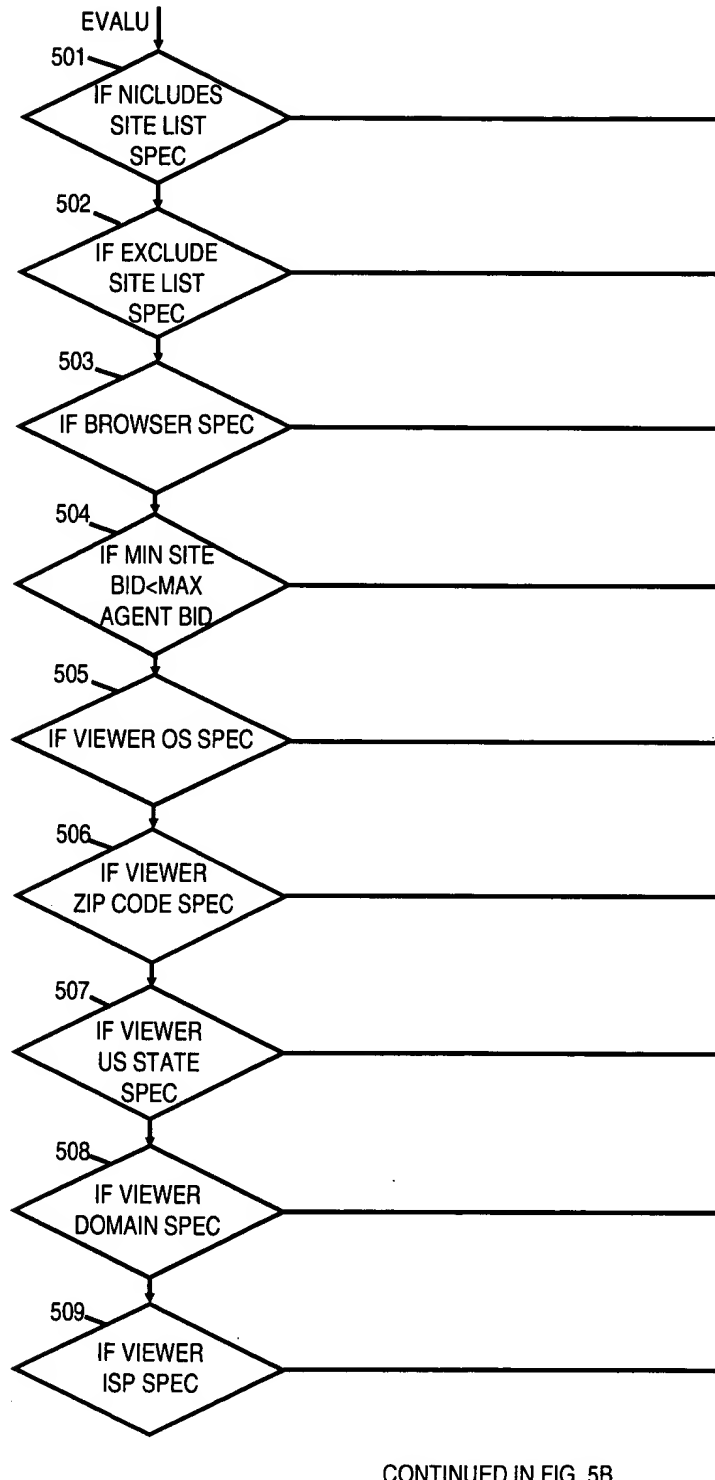
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DATA TABLES 16B IN VIEW SERVER 320

N	CV	WS	SP	TS

— 408

TABLE NAME HVD

VO	AA	PP	CV	WS	SP	TS	AC	AJ	TSC

— 409

TABLE NAME SOD

FIG . 4

LTS	IP	DN	CO	EA	BT	CV	ZC	PDC

— 410

TABLE NAME CVD

BL	CTL	VL	TE	AA	

— 412

TABLE NAME AAD

	415A
	VODX

— 415

NAME OF MEMORY AREA VOD

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FIG . 5A

EVALU

501 — IF NICLUDES SITE LIST SPEC

502 — IF EXCLUDE SITE LIST SPEC

503 — IF BROWSER SPEC

504 — IF MIN SITE BID<MAX AGENT BID

505 — IF VIEWER OS SPEC

506 — IF VIEWER ZIP CODE SPEC

507 — IF VIEWER US STATE SPEC

508 — IF VIEWER DOMAIN SPEC

509 — IF VIEWER ISP SPEC

CONTINUED IN FIG. 5B

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FIG . 5B

510 — IF VIEWER
COUNTRY
SPEC

511 — IF VIEWER
SIC CODE
SPEC

512 — IF VIEWER#
EMPLOYEES
SPEC

513 — IF VIEWER
ANNUAL REVENUES
SPEC

514 — IF TIME LIST SPEC

515 — IF KEYWORDS
LIST SPEC

516 — IF MAX
AGENT
CLICKTHRU

517 — IF NO CTI MATCH

518 — IF INTERAD
TIME INTERVAL
SPECIFIED

CONTINUED IN FIG. 5C

Replacement Sheet
Appl. No.: 09/216,206 **Inventor:** David W. Roth et al. **For:** System and method for real-time bidding for Internet advertising space
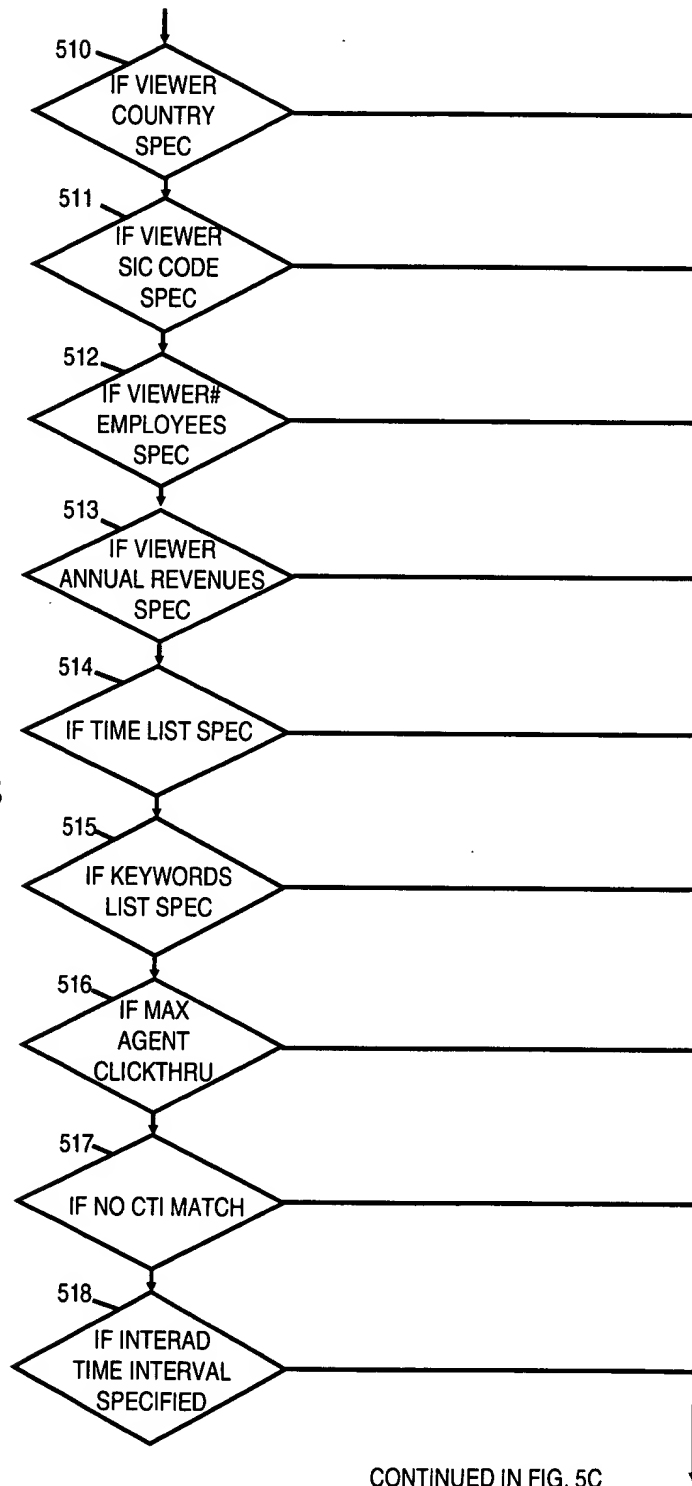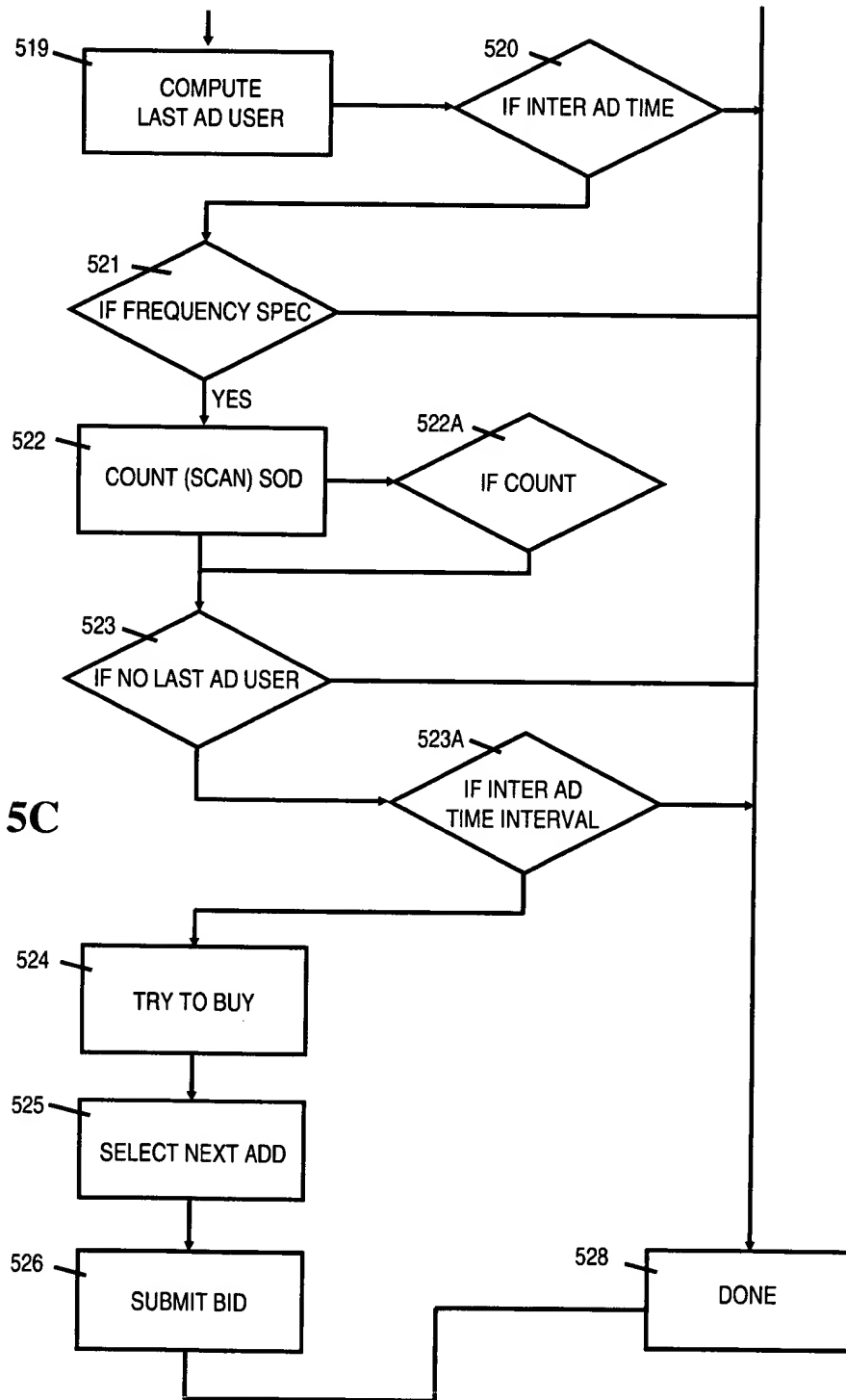
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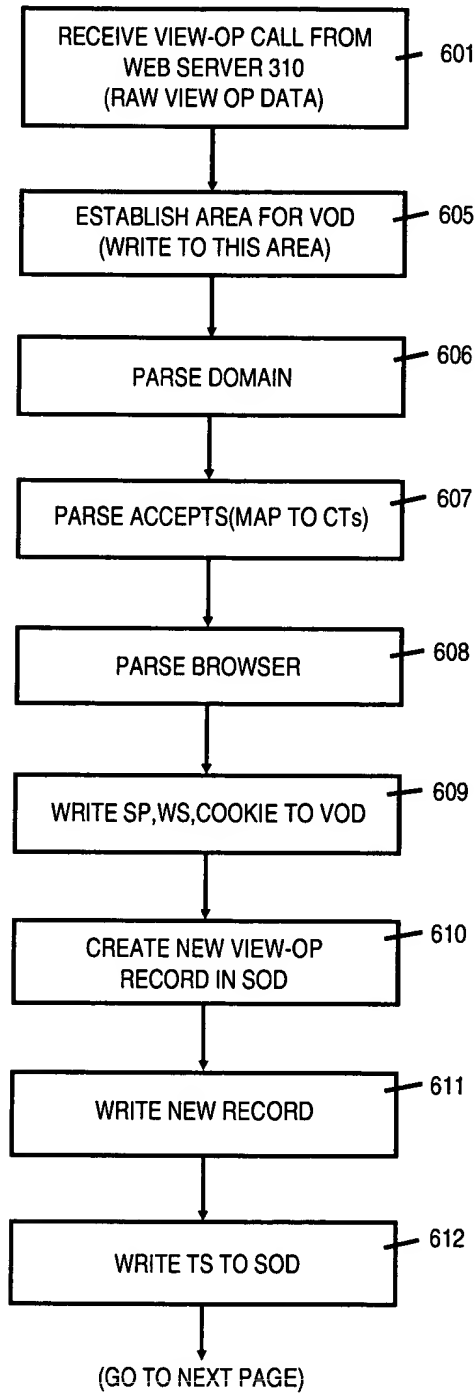**FIG . 5C**

Replacement Sheet

Appl. No.: 09/216,206 **Inventor:** David W. Roth et al. **For:** System and method for real-time bidding for Internet advertising space

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PROCESS BEGINS WHEN WEB SERVER 310
PROVIDES A NEW VIEW-OP TO SERVER 320

RECEIVE VIEW-OP CALL FROM
WEB SERVER 310
(RAW VIEW OP DATA) — 601

ESTABLISH AREA FOR VOD
(WRITE TO THIS AREA) — 605

PARSE DOMAIN — 606

PARSE ACCEPTS(MAP TO CTs) — 607

PARSE BROWSER — 608

BEGIN OPERATION

FIG . 6A

WRITE SP,WS,COOKIE TO VOD — 609

CREATE NEW VIEW-OP
RECORD IN SOD — 610

WRITE NEW RECORD — 611

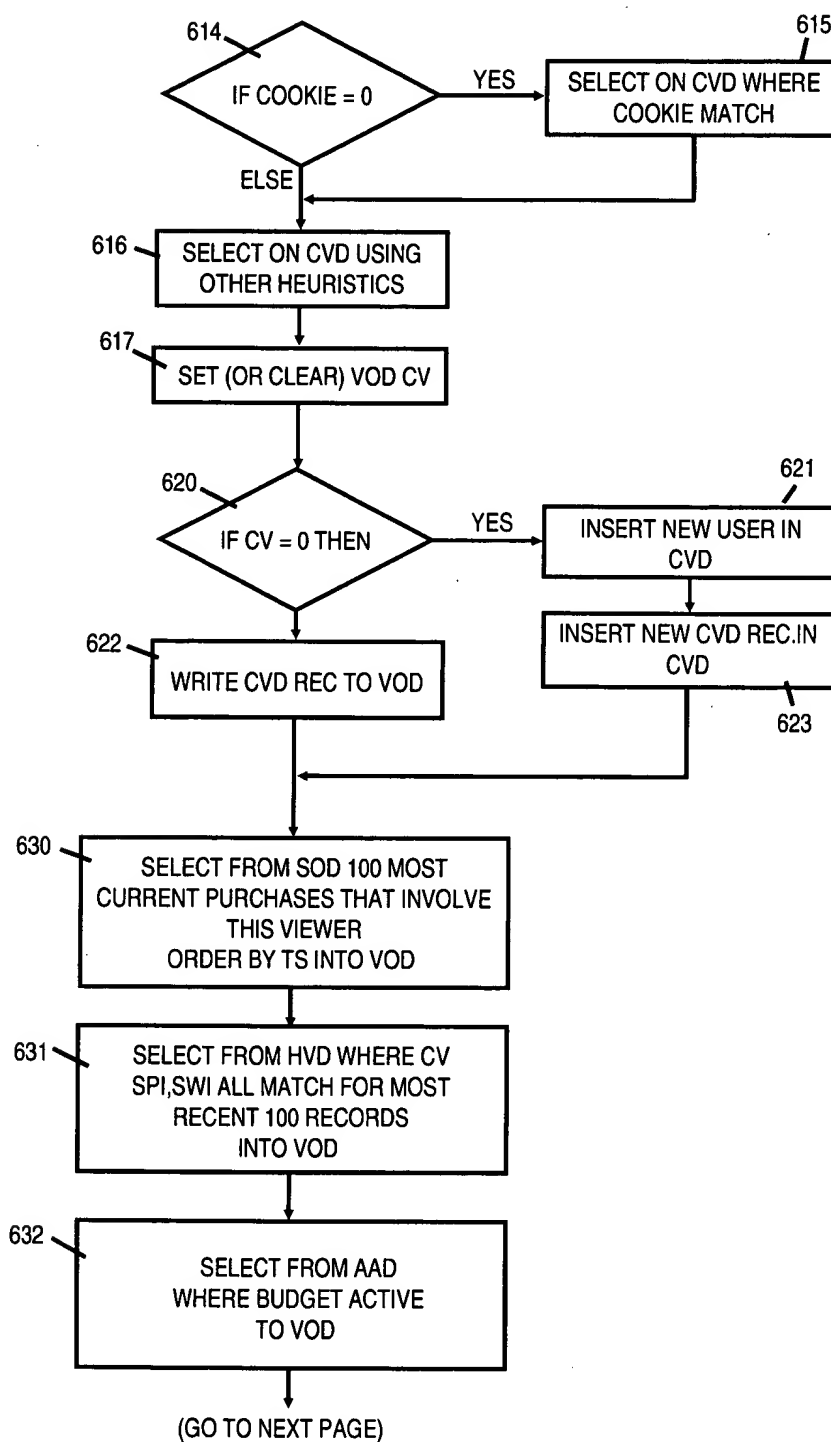WRITE TS TO SOD — 612

(GO TO NEXT PAGE)

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FIG . 6B

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634 — EACH BIDDING AGENT RUNS ITS LOGIC (SEE FIGURE 5)

635 — SEND RESULT TO VIEW SERVER 320

641 — PICK MAXIMUM BID

642 — UPDATE AAD DATA

643 — CHECK FOR EXPIRATION OF BIDDING AGENT

644 — SET VOD. AA SLOT TO WINNER

FIG . 6C

645 — IF WHEN NEW RECORD WRITTEN IN CVD SIZE OF CVD > MAX SIZE THEN

YES → 646 SELECT OLDEST CVD RECORD AND POST TO ARCHIVE FILE

650 — IS SIZE OF CVD >MAXSIZE THEN

YES → 651 DELETE OLDEST CVD RECORD

653 — COMPOSE SOD RECORD FROM VOD DATA

654 — INSERT SOD RECORD

(GO TO NEXT PAGE)

Replacement Sheet
Appl. No.: 09/216,206 **Inventor:** David W. Roth et al. **For:** System and method for real-time bidding for Internet advertising space
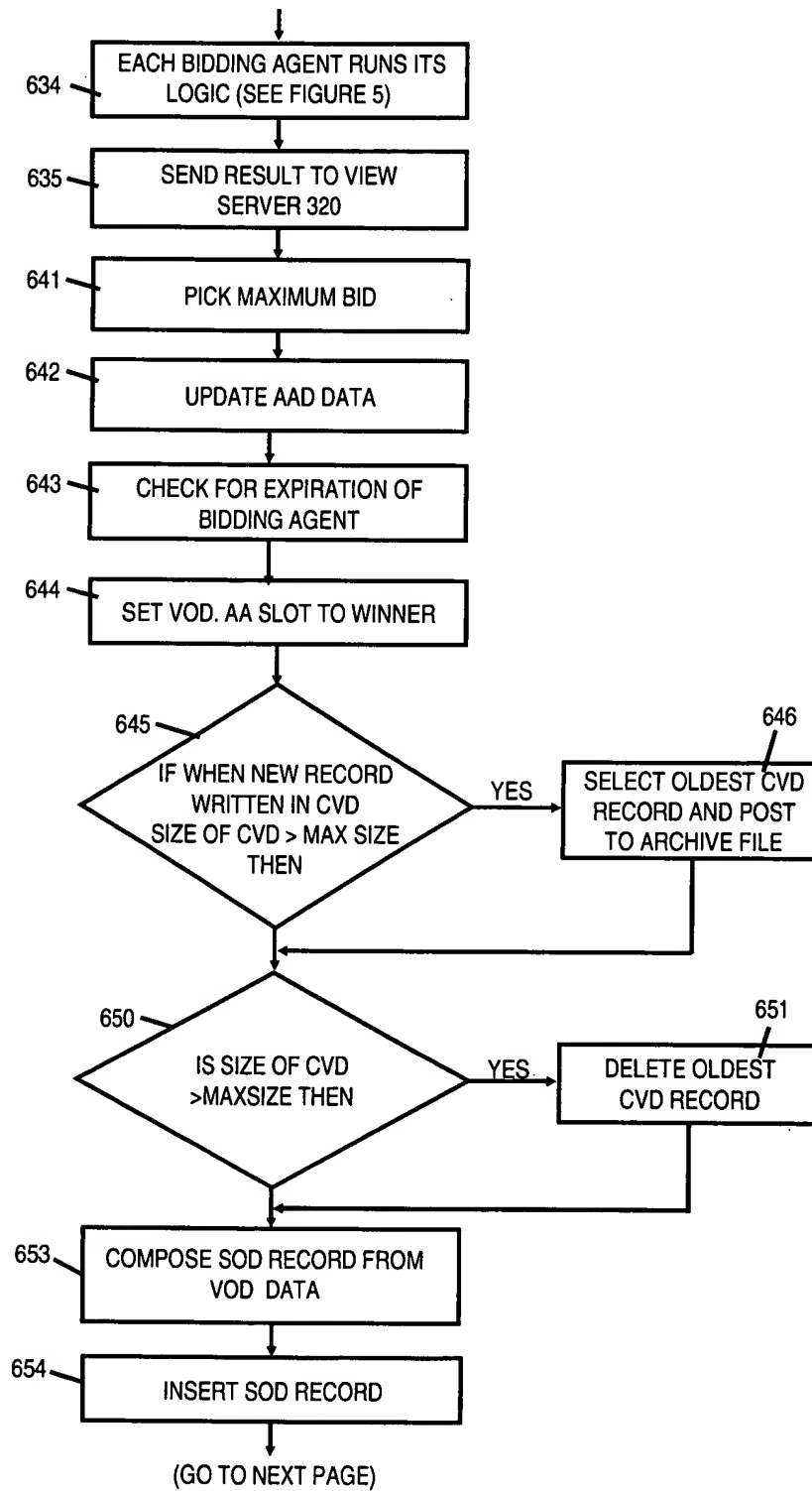
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655 ⟨IF COUNT OF SOD RECORD >MAXSIZE⟩ —YES→ 656 [SELECT OLDEST SOD RECORD POST TO ARCHIVE]

660 ⟨IF COUNT OF SOD RECORDS >MAXSIZE⟩ —YES→ 661 [DELETE OLDEST SOD RECORD]

FIG . 6D

662 [SELECT FROM HVD WHERE CV= CV,SP,SW CURRENT TIME INTERVAL]

663 [WRITE DATA TO VOD]

664 ⟨IF HVD REC FOUND THEN⟩ —NO→ 665 [INSERT NEW HVD REC]

YES

666 [UPDATE EXISTING HVD REC]

GO TO NEXT PAGE

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670 — IF NEW HVD REC WAS INSERTED AND COUNT >MAXSIZE THEN

YES → 671 DELETE OLDEST HVD RECORD

672 — CREATE ACCOUNTING REC. FROM VOD DATA

673 — POST FOR ACCOUNTING SEND TO ARCHIVE

674 — POST AD CONTENT INDEX TO WEB SERVER 320

675 — DELETE THE VOD

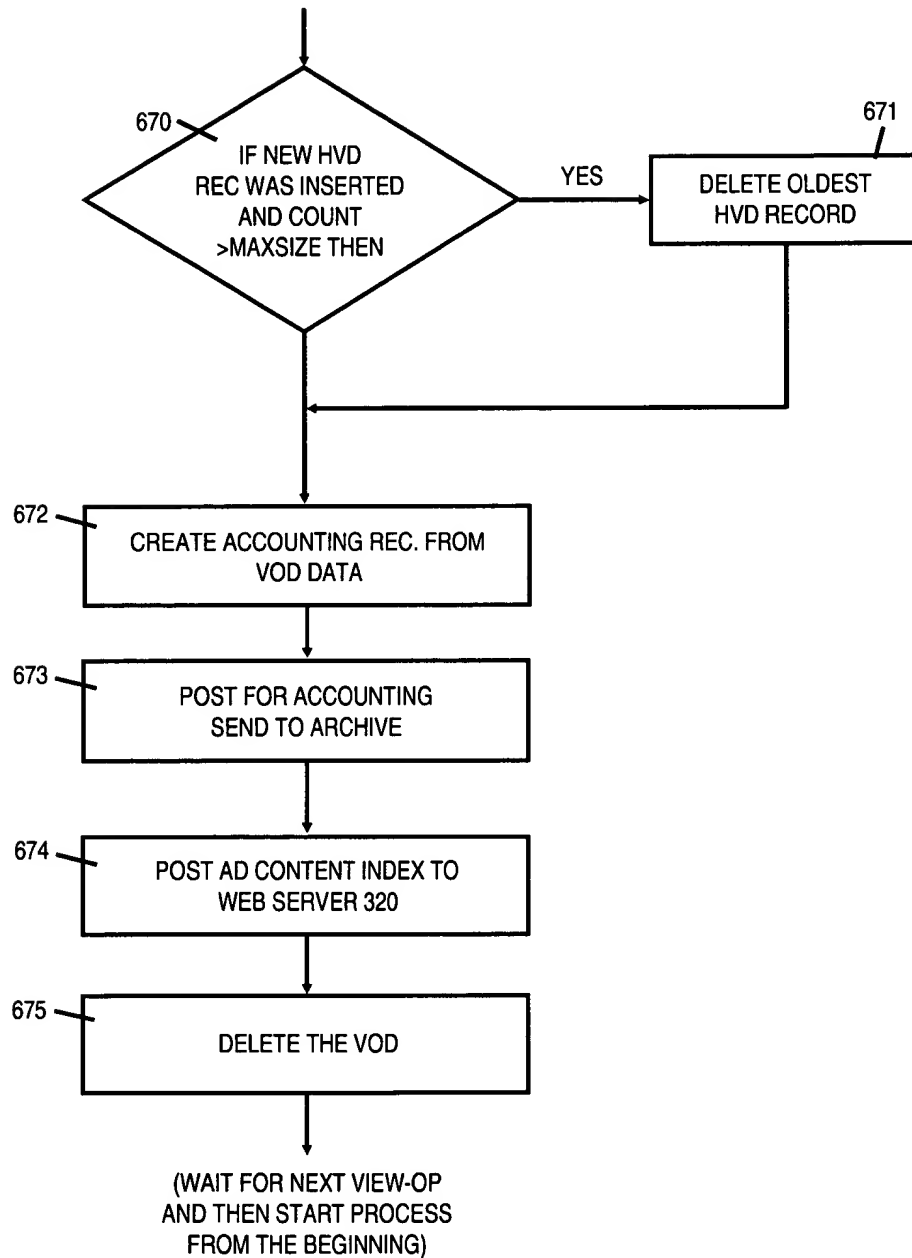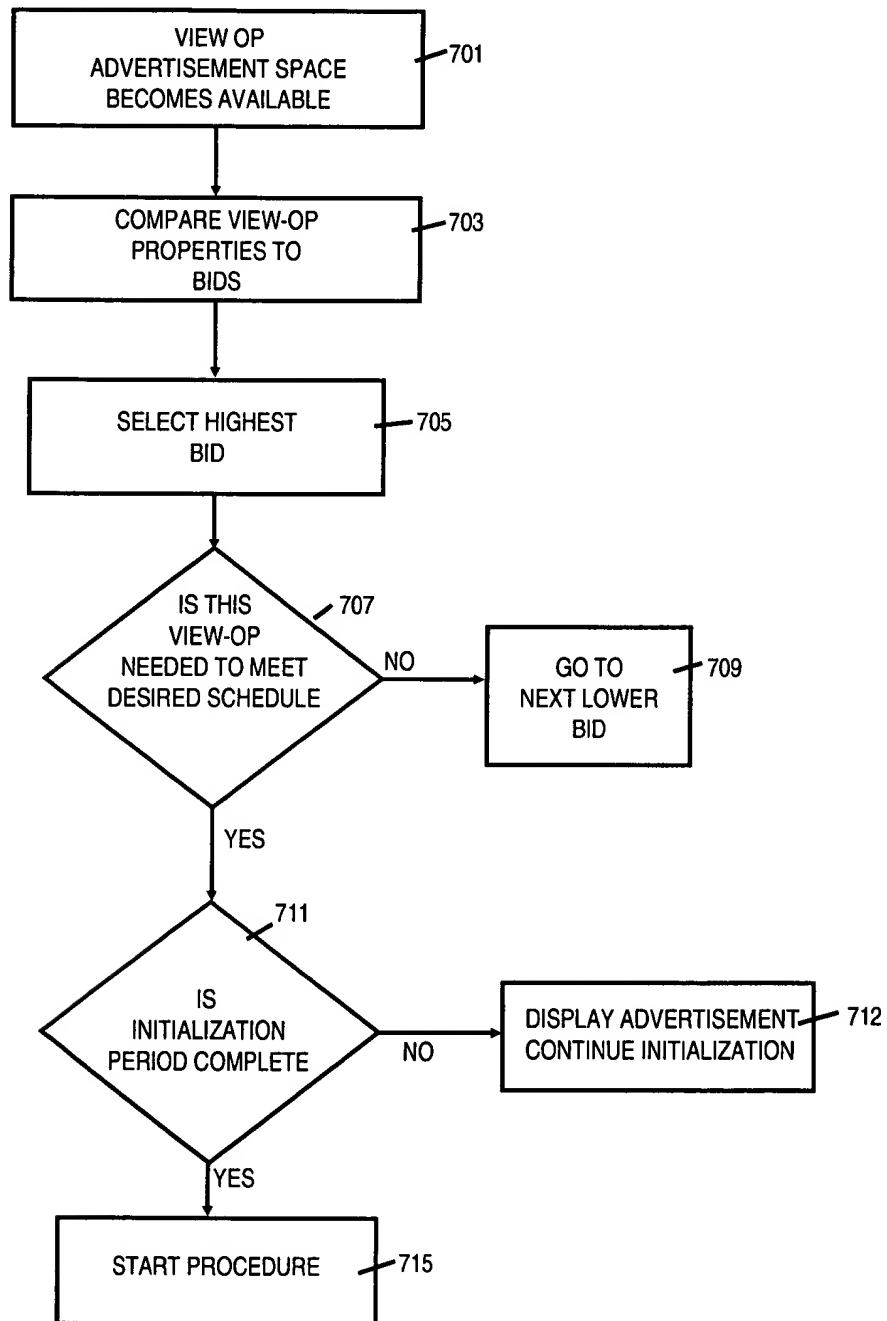(WAIT FOR NEXT VIEW-OP AND THEN START PROCESS FROM THE BEGINNING)
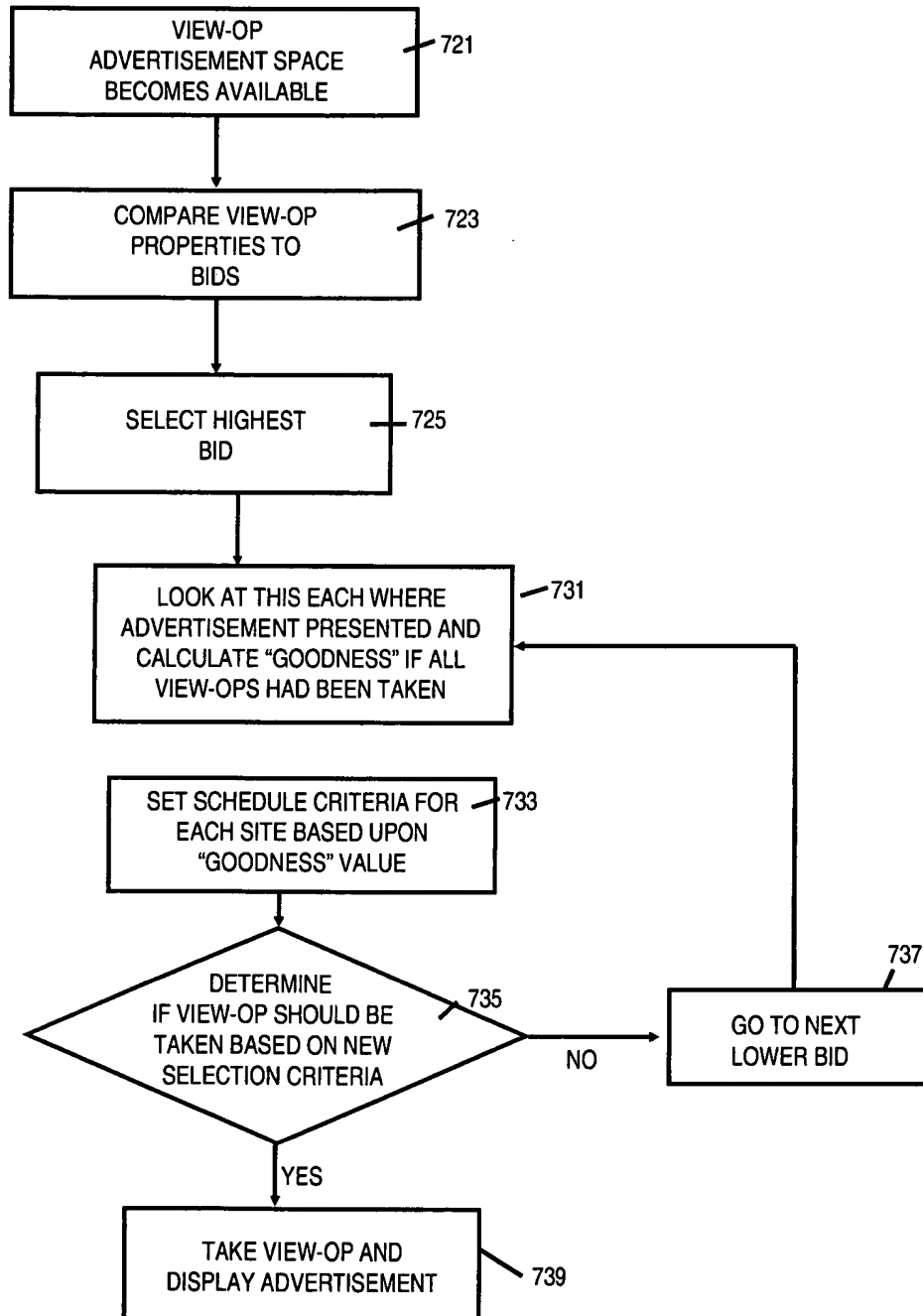
FIG . 6E

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FIG. 7A (INITIALIZATION PERIOD)

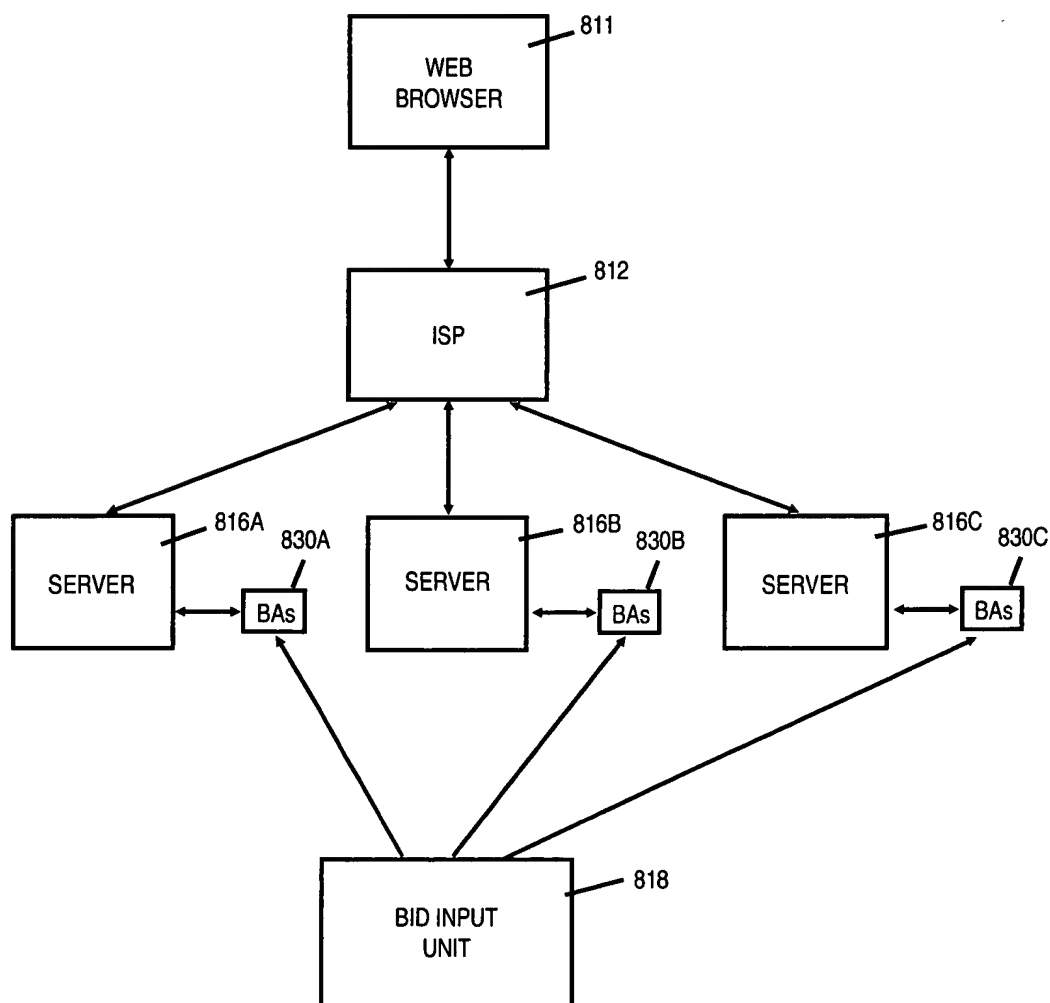**14/15**

FIG. 7B
(PROCEDURE FOLLOWING INITIALIZATION)

```
        ┌─────────────────────────┐
        │        VIEW-OP          │
        │  ADVERTISEMENT SPACE    │── 721
        │    BECOMES AVAILABLE    │
        └───────────┬─────────────┘
                    │
                    ▼
        ┌─────────────────────────┐
        │    COMPARE VIEW-OP      │── 723
        │     PROPERTIES TO       │
        │         BIDS            │
        └───────────┬─────────────┘
                    │
                    ▼
        ┌─────────────────────────┐
        │    SELECT HIGHEST       │── 725
        │         BID             │
        └───────────┬─────────────┘
                    │
                    ▼
  ┌──────────────────────────────────┐
  │   LOOK AT THIS EACH WHERE        │── 731
  │ ADVERTISEMENT PRESENTED AND      │◄────────────┐
  │ CALCULATE "GOODNESS" IF ALL      │             │
  │   VIEW-OPS HAD BEEN TAKEN        │             │
  └────────────────┬─────────────────┘             │
                   │                                │
                   ▼                                │
  ┌──────────────────────────────────┐             │
  │  SET SCHEDULE CRITERIA FOR       │── 733       │
  │    EACH SITE BASED UPON          │             │
  │      "GOODNESS" VALUE            │             │
  └────────────────┬─────────────────┘             │
                   │                                │
                   ▼                             ┌──┴────────┐
            DETERMINE                            │  737      │
         IF VIEW-OP SHOULD BE  735      NO   ┌───┴────────┐  │
         TAKEN BASED ON NEW ─────────────────│ GO TO NEXT │
          SELECTION CRITERIA                 │ LOWER BID  │
                   │                         └────────────┘
                   │ YES
                   ▼
        ┌─────────────────────────┐
        │    TAKE VIEW-OP AND      │── 739
        │  DISPLAY ADVERTISEMENT   │
        └─────────────────────────┘
```

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WEB BROWSER — 811

ISP — 812

SERVER — 816A   830A BAs

SERVER — 816B   830B BAs

SERVER — 816C   830C BAs

BID INPUT UNIT — 818

FIG. 8